IN THE CLAIMS:

Please amend the claims as indicated below:

1. (Currently Amended) A method of transmitting a signal in an orthogonal frequency division multiplexing (OFDM) system having a plurality of sub-carriers, comprising the steps of:

differentially encoding said signal in the frequency domain using adjacent sub-carriers to produce differentially encoded symbols;

storing said differentially encoded symbols and one or more pilot tones in an IFFT buffer to produce an analog signal centered at a desired carrier frequency; and

transforming said analog signal ~~said differentially modulated signal~~ to create said OFDM signal.

2. (Currently Amended) The method of claim 1, wherein said transforming step ~~implements a~~ implements an Inverse Fast Fourier Transform.

3. (Original) The method of claim 1, wherein said transforming step implements an orthogonal transformation.

4. (Original) The method of claim 1, wherein said transforming step generates said OFDM signal with a plurality of sub-carriers for carrying data.

5. (Original) The method of claim 4, wherein at least one unmodulated sub-carrier generated by said transforming step is allocated as a pilot bin to provide a reference within each OFDM symbol.

6. (Original) The method of claim 4, wherein said differential encoding is performed with respect to consecutive sub-carriers in said OFDM system.

7. (Currently Amended) An orthogonal frequency division multiplexing (OFDM)

transmitter for transmitting an OFDM signal having a plurality of sub-carriers, comprising:

a differential encoder for modulating said OFDM signal in the frequency domain using adjacent sub-carriers to produce differentially encoded symbols;

an IFFT buffer for storing said differentially encoded symbols and one or more pilot tones to produce an analog signal centered at a desired carrier frequency; and

a transformer for creating said OFDM signal.

8. (Currently Amended) The transmitter of claim 7, wherein said transformer ~~implements a~~ implements an Inverse Fast Fourier Transform.

9. (Original) The transmitter of claim 7, wherein said transformer implements an orthogonal transformation.

10. (Original) The transmitter of claim 7, wherein said transformer generates said OFDM signal with a plurality of sub-carriers for carrying data.

11. (Original) The transmitter of claim 10, wherein at least one unmodulated sub-carrier generated by said transforming step is allocated as a pilot bin to provide a reference within each OFDM symbol.

12. (Original) The transmitter of claim 10, wherein said differential encoding is performed with respect to consecutive sub-carriers in said OFDM system.

13. (Currently Amended) A method of receiving a signal in an orthogonal frequency division multiplexing (OFDM) system having a plurality of sub-carriers, comprising the steps of:

transforming said received signal to recover an OFDM signal in the frequency domain having a plurality of sub-carriers, wherein said transformed signal contains differentially encoded symbols and one or more pilot tones and wherein said transformed signal is centered at a desired carrier frequency; and

differentially decoding said OFDM signal in the frequency domain wherein said differential decoding is performed using adjacent sub-carriers.

14. (Original) The method of claim 13, wherein said transforming step implements a Fast Fourier Transform.

15. (Original) The method of claim 13, wherein said transforming step implements an orthogonal transformation.

16. (Original) The method of claim 13, wherein at least one unmodulated sub-carrier recovered by said transforming step is allocated as a pilot bin to provide a reference within each OFDM symbol.

17. (Original) The method of claim 13, wherein said differential decoding is performed with respect to consecutive sub-carriers in said OFDM system.

18. (Currently Amended) An orthogonal frequency division multiplexing (OFDM) receiver for receiving an OFDM signal having a plurality of sub-carriers, comprising:

a transformer for recovering said OFDM signal having a plurality of sub-carriers, wherein said recovered signal contains differentially encoded symbols and one or more pilot tones and wherein said recovered signal is centered at a desired carrier frequency; and

a differential decoder for demodulating said OFDM signal in the frequency domain wherein said differential decoding is performed using adjacent sub-carriers.

19. (Original) The receiver of claim 18, wherein said transformer implements a Fast Fourier Transform.

20. (Original) The receiver of claim 18, wherein said transformer implements an orthogonal transformation.

21. (Original) The receiver of claim 18, wherein at least one unmodulated sub-carrier recovered by said transformer is allocated as a pilot bin to provide a reference within each OFDM symbol.

22. (Original) The receiver of claim 18, wherein said differential decoder demodulates said OFDM signal with respect to consecutive sub-carriers in said OFDM system.